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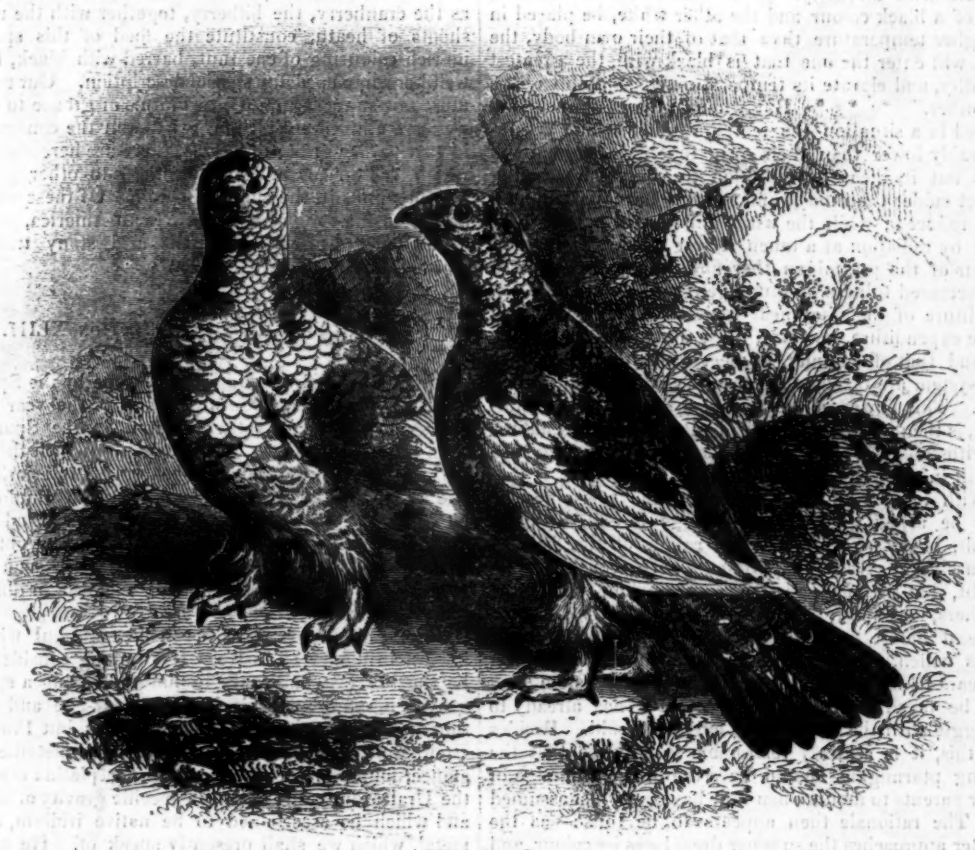
THE GROUSE OF EUROPE.—No. II.



[Ptarmigan.]

Having briefly illustrated the general habits of the woodland-grouse (*tetrao*), we shall now proceed to the next European group, that of the ptarmigan-grouse, or genus *lagopus*. Of this group two species are exclusively indigenous in the British islands, namely, the common ptarmigan (*lagopus mutus*), and the red grouse or moor-game (*tetrao Scoticus*). The common ptarmigan is not only a native of Scotland, but of the higher latitudes of continental Europe, where the willow-ptarmigan and the rock-ptarmigan, &c., are also abundant. In their manners, the ptarmigans mutually resemble each other;—it may be observed, however, that in Scotland (a comparatively temperate climate) the bare and bleak mountains are the permanent abode of the species there indigenous; while, under the intense severity of winter within the polar circle, they all quit the more exposed situations and seek the willows and copse-woods which border the rivers, and stretch over the sheltered vales. Mountain-berries and heath-shoots in summer,—spring-buds and leaves in winter,—constitute their food, in search of which, as well as for the sake of shelter, they burrow beneath the snow. Perhaps the changes of plumage in none of the feathered races are more worthy of attention than those which the ptarmigans undergo. Their full summer plumage is of a yellow, more or less inclining to brown, beautifully barred with zigzag lines of black;—their winter plumage is pure white, except that the outer tail-feathers, the shafts of the quills, and, in our species, a streak from the eye to the beak, are black.

Let us first examine the reasons for such a change, and next the mode in which it is conducted.

The brown patches of heath on the rocky sides of the mountains assimilate well in their broken and blended tints with the summer livery of the ptarmigan; and as concealment from the observation of enemies is one of the laws of nature, this end is, so far, well answered. But when the mountains are covered with snow, when the whole surface of the country is one wide waste of dazzling white, the brown ptarmigan can only escape the notice of its foes by adopting a corresponding dress; so that while crouching in the snow, it will scarcely attract the glance of the Iceland Falcon or the Snowy Owl. Yet the safety which arises from its change of plumage is neither the sole nor the principal motive for that change. This motive we consider to be the provision against the intensity of the cold accruing to the bird by the transition in question. For it not only happens that the plumage turns to white,—but it be-

comes much fuller, thicker, and more downy,—the bill is almost hidden, and the legs become so thickly covered with hairlike feathers, to the very end of the toes, as to resemble the legs of some well-furred quadruped,—the hare of the same wild regions, for instance. It is well known that *colour* greatly influences the rate at which bodies either reflect heat, or acquire and part with it, and that objects which reflect heat the most, part with it the least:—now it has been observed that "reflection takes place most readily in objects of a white colour, and from such, consequently, heat will radiate with difficulty." * * * "If two animals, one of a black colour and the other white, be placed in a higher temperature than that of their own body, the heat will enter the one that is black with the greatest rapidity, and elevate its temperature considerably above the other." * * * But when "these animals are placed in a situation the temperature of which is considerably lower than their own, the black animal will give out its heat by radiation to every surrounding object colder than itself, and speedily have its temperature reduced; while the white animal will part with its heat by radiation at a much slower rate." The winter colour of the ptarmigan therefore, in conjunction with its increased fulness of plumage, tends to limit the expenditure of the vital heat generated in the system; some expenditure, however, must and does take place, beyond that of summer, to meet which the energies of the system are taxed to increase the ratio of its production. This power in the animal system of generating heat, is the principle upon which all animals are enabled to withstand the effect of cold, and to preserve life and health in a low temperature.

With respect to the plumage of the ptarmigan, it may be asked whether this change is effected by a moult, or by a change in the colour of the feathers themselves? Recent experiments have proved beyond doubt, that the change is that of the colour, not of the feathers,—at least, the plumage does not undergo a general moult for that purpose. The moult of those birds which, like the ptarmigan, change their livery, appears to be gradual, in order that the system may not be taxed too much, seeing that it has already to struggle with the debilitating effects of cold. Besides all this, it is scarcely reasonable to suppose that the young ptarmigans should have the brown plumage of their parents to moult when they have only just assumed it. The rationale then appears to be thus:—as the winter approaches the summer dress loses its colour, and gradually passes into white; while, at the same time, an addition of new white feathers increases the fulness of the plumage. On the approach of spring the older feathers of the past year are thrown off, their place being supplied by coloured ones, while the white ones that sprang up as the winter set in, gradually gain the hue which was then denied them. Hence in spring ptarmigans are seen in a livery irregularly parti-coloured; the new feathers having been developed, while the white ones that endure are as yet uncoloured: these having acquired their tints will be moulted in autumn, so that no individual feather undergoes more than one mutation. It will be seen from this that the moult is never simultaneously performed; but that a partial loss and accession of feathers, except in the depth of winter, is almost constantly taking place.

The red grouse, or moor-game, undergoes no change of colour like the ptarmigan; it however acquires a greater mass of clothing, and its legs are more covered with hairlike feathers in winter than in summer. It would seem either that its native districts, the wild heathy moorlands of our islands, afford more shelter than the favourite localities of the ptarmigan, or that its system needs not this change in order to enable it to resist the cold. It is somewhat singular that this beautiful bird should not be known on the continent, abundant as it is on the moorlands of Scotland, England, and Ireland. Its value, as game, need not be pointed out. The breeding season of the red grouse is early in spring, the pairing commencing in January. The female deposits her eggs, eight or ten in number, in a shallow bed among the heath, and both herself and her mate attend the young with great assiduity. The brood continue in company during the winter, and often unite with other broods, forming large packs, which range the high moorlands, being usually shy, and difficult to be approached. Various berries, such as the cranberry, the bilberry, together with the tender shoots of heath, constitute the food of this species: its rich colouring of chestnut, barred with black, is too well known to need any special description. Our readers must not suppose that the two forms of grouse to which we have alluded are all that exist,—on the contrary, as in every other group of nature, there are here also some which lead off (or indicate affinities) to other groups, forming links in the chain of being. Of these we may allude to the *urophasianus* of North America, and the sand-grouse (*pterocles*) of the arid stony tracts of Turkey, Spain, and Africa.

MINERAL KINGDOM.—Section XLIII.

Platina.

This metal was first brought to Europe by the Spanish traveller, Ulloa, from South America, in the year 1741. It was so named (or rather *platinja*) by the Spaniards from its resemblance in colour to silver, which they call *plata*; and they indicated its supposed inferiority, by one of the terminations they sometimes employ for diminutives. It was first brought to England from Jamaica in 1749, but the specimens were obtained there from Carthagena. Its qualities were soon after investigated by the most eminent chemists in different parts of Europe.

Pure platina has a silvery whiteness, but with an inferior brilliancy of lustre. It was long considered to be the heaviest substance in nature, having a specific gravity of 21·5; that is, being twenty-one and a half times as heavy as water, bulk for bulk; but Professor Breithaupt of Freyberg has described a metallic substance, found in the sand containing platina ore from the Ural Mountains, having a specific gravity of 23·64, and which he ascertained to be native iridium, a rare metal, which we shall presently speak of. He further conjectures, that, had the mass on which he operated been larger and of greater purity, the specific gravity would have been 24·00 or 25·00*. Platina is malleable to a considerable extent, for it may be beat out into very thin leaf, but it is inferior in this quality to gold, silver, copper, and tin. It is the most ductile of all the metals, as was proved by the experiments of the late Dr. Wollaston, described in the 'Philosophical Transactions' for 1813, who succeeded in drawing it to the extraordinary tenuity of $\frac{1}{12,000}$th part of an inch in diameter. His process was simple and ingenious. Those who draw silver wire in large quantities for lace and embroidery sometimes begin with a rod of silver that is about three inches in diameter, and ultimately draw that out so as to obtain wires that are as small as $\frac{1}{300}$th part of an inch in thickness. If a hole be drilled in the silver rod longitudinally, in any stage of the process, having its diameter $\frac{1}{10}$th part of that of the rod, and if a wire of pure platina be inserted so as to fill the hole, it is evident that, by continuing to draw the rod, the platina will be reduced in diameter exactly in the same proportion as the silver; so that, if both be drawn out together till the diameter of the silver is

* See Schweigger's 'Neues gahrbuch der Chemie und Physik,' 1833.

$\frac{1}{100}$th of an inch, then that of the platina will be only $\frac{1}{1000}$th part. Dr. Wollaston followed this method; but as it is difficult to drill a hole in the silver, he formed a cylindrical mould, $\frac{1}{4}$ of an inch in diameter, fixed in the centre of it a platina wire, previously drawn to $\frac{1}{100}$th of an inch, and then filled the mould with melted silver. By successive reductions, he obtained wires of $\frac{1}{1000}$ and $\frac{1}{2000}$, each excellent for applying to the eye-pieces of astronomical instruments; and in subsequent experiments he obtained a wire as small as $\frac{1}{30,000}$th part of an inch. When the drawing was completed, the wire was thrown into nitric acid, which dissolved the silver, leaving the platina behind, upon which it has no action. The tenacity of platina is very considerable, for a wire $\frac{1}{10}$th of an inch in diameter will sustain a weight of 590 lbs., gold of the same diameter supporting a weight of 500. Even when extremely fine drawn its tenacity is evident; for, according to Dr. Wollaston, a wire $\frac{1}{12,000}$th of an inch supported 1½ grain before it broke. It is the most difficult of fusion of all the metals, and is generally described as resisting the strongest heat of a smith's forge or a blast-furnace; but Messrs. Stodart and Faraday state* that it was partially fused by them in furnaces at the Royal Institution. Dr. Marcet fused platina wire in the flame of a spirit-lamp urged by a blowpipe with oxygen gas; and when exposed to the heat of a great galvanic battery, it melts, and then burns, giving out sparks. It is not acted upon either by air or moisture at any temperature, and this property of preserving its purity under such circumstances constitutes its title to be ranked among the noble or precious metals. It is remarkable that, although so dense a body, it is a worse conductor of heat than many substances of inferior density. A piece of platina leaf which is red-hot at one end can be held between the fingers with impunity, but that is not the case with silver and other metals of greatly-inferior specific gravities.

The ore of platina was, for a long time, known only in the form of grains, with now and then some rounded lumps, of small dimensions, disseminated in alluvial soils, like stream-gold and stream-tin. But Boussingault, a French naturalist, who has been for some years carrying on many interesting scientific inquiries in South America, found platina associated with gold in veins traversing a species of granite in the province of Antioquia; and Professor Von Engelhard has ascertained that the matrix of the platina of the Urals is a syenitic greenstone porphyry, that is, a member of the trap-family of rocks. The two great sources from which we derive this metal are the provinces of Choco and Barbacoas, in the north-western part of Columbia, adjoining the Isthmus of Panama, and in a district of the Ural Mountains,—that range which extends in a north and south direction nearly from the shores of the Caspian to the Arctic Ocean, separating European from Asiatic Russia. The platina of Choco is found principally on the left bank of the river Cauca, in the same alluvial soil from which the chief part of the gold of New Granada is obtained. For a long period its value was unknown, and, in separating the grains of gold, it was thrown away with the sand and pebbles, so that the quantity lost must have been immense. The grains are small, and lumps are very rare; but there is a specimen in the royal cabinet at Madrid which weighs 11,641 grains, or rather more than two Troy pounds. The platina of Russia is found on the eastern slope and in the central and northern part of the Ural Mountains, more particularly in the province of Jekatherinburg; and Nishnei-Tagilsk, in lat. 58° 41′, is the central point of a district belonging to Count Demidoff, where there is an alluvial soil extremely rich in gold and platina, and which, according to M. Von Humboldt, has a remarkable similarity to the platina-district of Choco abovementioned. A lump was found near Nishnei-Tagilsk which weighs above 21 Troy pounds, and is now in the museum at Petersburgh, and lumps of smaller size are not uncommon. The quantity of platina obtained from the Ural district, according to M. Von Humboldt, was as follows:—

	Poods.	lbs.		lbs. Avoird.
In 1828,	93	33 which is equal to about		3378
1829,	78	31	„ „	2836
1830,	105	1	„ „	3780

Platina, in small quantity, has been found in the alluvial soils in which the diamonds of Minas Geraes, in Brazil, are met with, and also in the island of St. Domingo. Vauquelin found it in the silver-ore of Guadalcanal in Spain.

In the analyses of the ore brought from South America, four new metals were discovered, viz., Palladium and Rhodium, in 1803, by Dr. Wollaston, and Osmium and Iridium, in the same year, by Mr. Smithson Tennant. Berzelius, in more recent analyses, has found these four metals in the platina of the Urals. Dr. Wollaston mentions that some platina ore brought from Brazil was found by him to be nearly pure, and among the grains were some of native palladium. Of these four metallic bodies rhodium is the only one which has hitherto been used in the arts. A series of interesting researches on different alloys of steel, conducted, in the laboratory of the Royal Institution, by Mr. Stodart, the eminent cutler, and Mr. Faraday, are described in the 'Philosophical Transactions' for 1822. Alloys with rhodium have been made in the large way, and they say that they are perhaps the most valuable of all, but, owing to the scarcity of the metal, they cannot be brought into general use. Some articles of fine cutlery were made, and also pens, which went by the name of "rhodium pens." Alloys were formed with osmium, iridium, and palladium. A proportion of $\frac{1}{100}$th part of palladium produces a very valuable steel for making instruments that require perfect smoothness of edge. The best proportion of alloying metal for edge-tools was found to be one part in the hundred. An alloy of platina produces a steel of excellent quality.

To obtain pure platina from the ore was long an extremely difficult process, and greatly retarded its application in the useful arts. A method was discovered by Dr. Wollaston, who established a manufacture of it, and which is understood to have yielded him a very large sum of money, for the platina used in the arts in England was, for several years, obtained almost, if not altogether, exclusively from him. He kept the process a secret until within a very short time of his death, when a full account of it was laid before the Royal Society in November 1828, and published in the 'Philosophical Transactions' shortly afterwards.

Uses of Platina.—The resistance which this metal offers to the action of air and moisture as well as to a large proportion of chemical agents, together with its power of sustaining the most intense heat without melting, renders it a most valuable substance for crucibles and other vessels used in chemical processes. In the manufacture of oil of vitriol, or sulphuric acid, on the large scale, it was usual to employ glass retorts for the purification and concentration of the acid; but these being liable to break from various causes, great loss was often sustained, and the workmen were exposed to serious injury from the destructive effects of the acid when such accidents occurred. Mr. Tennant, of Glasgow, conceived the idea of substituting retorts of platina for those of glass, by which means not only the accidents from breakage would be avoided, but a

* 'Philosophical Transactions,' 1822.

much stronger heat could be employed in the process of distillation than could be ventured upon with the glass. The extent of loss in using the glass vessels may be conceived, when it was found economical to substitute for them so costly a material. The works of this ingenious and enterprising chemist were originally established for the manufacture of a substance used in bleaching—a combination of chlorine, or oxy-muriatic acid gas, with lime; they have now been increased by the addition of manufactures of sulphuric acid, soda, and soap, processes all connected together; and his establishment is probably the most extensive of the kind in any part of the world, there being no less than eleven acres *under roof*. The magnitude of his platina vessels is quite in keeping with that of the rest of his works, for he has two retorts of that metal for distilling sulphuric acid, the one of which cost 1600*l*., and the other 1680*l*. One of them weighs 1445 ounces, and has a capacity of 79 wine gallons, the other weighs 1370 ounces, and has a capacity of 90 gallons. Pieces of money have been struck in this metal in Russia, but the circulation is not as yet extensive, nor has it been applied for that purpose in any other country that we are aware of. Platina has been employed by Mr. Daniel in the construction of his ingenious pyrometer, or instrument for measuring high temperatures, founded on its properties of expansion and infusibility. By this new instrument many corrections have been made of the very erroneous estimates of the melting points of various substances as determined by the pyrometer of Wedgwood. Thus iron was said to melt at 158 degrees of Wedgwood, and as every degree of that scale is equal to 130 degrees of the thermometric scale of Fahrenheit, and as Wedgwood's scale commences at a point corresponding to a heat of 1077 degrees of Fahrenheit, the melting point of iron was supposed to be equal to the enormous heat of 21617 degrees. Mr. Daniel has reduced it by his more accurate instrument to 2786. The maximum of expansion of platina, and therefore the greatest heat it is capable of measuring is equivalent to 3280 degrees of Fahrenheit.

CHINA.—No. III.

The Great Wall of China.

The great wall of China, built to defend the empire from the incursions of the Tartars, has been familiar to us all from our childhood, as one of the wonders of the world. A sober examination, though it will somewhat lessen its magnitude and marvellousness, will still present us with an astonishing work, and impress us with a high notion of the industry and perseverance of the Chinese.

Father Gerbillon, one of the missionaries, who travelled along the chief part of it, passed through most of its principal gates, and indeed saw more of it than any other European, says, "it is indeed one of the most surprising and extraordinary works in the world; yet it cannot be denied that those travellers who have mentioned it have over magnified it, imagining, no doubt, that it was in its whole extent the same as they saw in the parts nearest Pekin, or at certain of the most important passes, where it is indeed very strong and well built, as also very high and thick." According to this valuable authority, from the Eastern Ocean to the frontiers of the province of Chan-si, or for the distance of 200 leagues, it is generally built of stone and brick, with strong square towers sufficiently near for mutual defence, and having besides at every important pass a formidable and well-built fortress. In many places in this line and extent the wall is double and even triple. But from the entrance of the province of Chan-si to its western extremity, the wall is nothing but a terrace of earth, in many places so much obliterated that the missionary could cross and recross it on horseback. There are numerous towers on this part of the wall, but they too are chiefly built of earth.

The wall is in many places carried over the tops of the highest and most rugged rocks. The missionary, P. Gerbillon, expresses his inability to comprehend how stones and bricks could be carried to such places, or how the Chinese could construct vast forts on spots where the boldest European architects would not attempt to raise the least building. The great wall which has now, even in its best part, numerous breaches, is made of two walls of brick and masonry, not above a foot and a half each in thickness, and generally many feet apart; the interval between them is filled up with earth, making the whole appear like solid masonry and brickwork: for six or seven feet from the ground these encasing walls are built of large square stones; the rest is of brick. The mortar used is of excellent quality. The wall itself averages about twenty feet in height, but the towers which are distributed along it are seldom less than forty feet high. At their base these towers are about fifteen feet square, but they gradually diminish as they ascend. Both walls and towers have battlements. There are stairs of brick and stone, as well as inclined planes, to ascend to the platform on the top of the wall, along which six horsemen may ride abreast. It must, however, be understood that this description applies only to the very best part of it.

Near every one of the gates in the wall that the missionary passed through he found a town or large village. Near one of the principal gates which opens on the road towards India, is situated Siningfu, a city of prodigious extent and population which was several times visited by the missionaries. The Jesuit fathers, Albert Dorville and Gruberus, stayed here thirty days, and had ample opportunity of examining the great wall in this part of the country. They described it as being so broad at the top, "that six horsemen placed abreast might run a race along it, without inconvenience to one another; and hence," they continue, "the esplanade on the top of the wall is much frequented by the citizens of Siningfu, both for the enjoyment of the air, which blows most wholesomely and pleasantly from the adjacent deserts, and for the performance of sundry games and exercises for the easing and recreating of the mind; for the walls are of that height that they readily invite the inhabitants unto them by the prospect they afford, and which is on every side most clear and open, and withal exceeding pleasant; and the stairs that give ascent unto the walls are broad and convenient*." They give the length of a journey which may be performed along the top of the wall, as occupying eighteen days, starting from the gate by Siningfu, and stopping by the gate at the city of Sucien, which opens upon the desert, and state that many travellers, from motives of mere curiosity, having obtained the permission of the Governor of Siningfu, and furnished themselves with provisions to that effect, have performed this mural journey. The contrast between the country within the wall and the wilds without, is described as being in certain points most striking: looking down from the battlements and towers which frequently fringed the loftiest rocks, these travellers could see on one side a cultivated expanse covered with numberless inhabitants, and on the other all the wildness of the desert, that seemed never to have been trod by human footsteps, but abounded with all sorts of wild beasts. The view of the wall itself must be equally imposing, as it traverses one vast plain after another, and strides over lofty mountains—its numerous towers here entire and there falling to ruins, the sides

* Ogilby's 'China,' vol. i.

of the walls here free and open, there overgrown with creeping plants, and garlanded with hardy trees that shoot from their interstices or that spring from their base; the whole, to appearance, stretching out as if it were to girdle the globe, or as if it had no end. An antiquity of 2000 years must add to the vastness and solemnity of the impression.

Mr. Barrow makes some curious calculations, which assist the conception of the magnitude of this wonderful wall. According to him, the materials of all the dwelling-houses in England and Scotland, supposing them to amount to 1,800,000 (Mr. Barrow wrote this thirty years ago), and to average on the whole 2000 cubic feet of masonry or brick-work, are barely equivalent to the bulk or solid materials of the great wall of China. Nor are the projecting massy towers of stone and brick included in this calculation. These alone are calculated to contain as much masonry and brick-work as London. The mass of matter is more than sufficient to surround the globe, on two of its great circles, with two walls, each six feet high and two thick! But in this calculation the earthy part in the middle of the wall is included.

It has been remarked as a singular omission that Marco Polo makes no mention of the wall of China, through which, it seems, he should have passed, and which must have left a deep impression on a mind so fond of the marvellous as his was. There is, however, a probability that he wandered through the wilds, passing through Corea, beyond the walls, to the eastern sea, where he might have embarked or found his way into China without seeing the walls.

In its good part, or from the eastern sea to the province of Chan-si (*i.e.*, for 200 leagues), there seems to be only two gaps or interruptions in this wonderful wall, and they are where an inaccessible mountain and broad rivers supply its deficiency. The avenues or passages through the wall to and from the desert are contrived arch-wise, like bridges, or are through walls under ground. The sally-ports for the troops, whence they could issue forth or retire as assault or invasion required, are very numerous. Purchas says, in his 'Pilgrims,' "When any enemy appeareth, they kindle fires upon the towers, to give the people warning to come to their places where they are appointed upon the wall." He adds in another place a curious fact, if it be one, that the walls and towers were garrisoned by condemned Chinese prisoners and foreign mercenaries. If they were, we need no longer be surprised that they hardly ever offered a serious resistance to foreign invasion. "This work," says the missionary Kircher, "is so wondrous strong, that it is for the greatest part of admiration to this day; for through the many vicissitudes of the empire, changes of dynasties, batteries and assaults, not only of the enemy, but of violent tempests, deluges of rain, shaking winds and wearing weather, yet it discovers no signs of demolishment, nor is it cracked or crazed with age, but appears almost as in its first strength, greatness, and beauty; and well it may be, for whose solidity whole mountains, by ripping up their rocky bowels for stones, were levelled, and vast deserts, buried with deep and swallowing sand, were swept clean to the firm ground."

The rapidity with which this work was completed is as astonishing as the wall itself. The whole is said to have been done, in five years, by many millions of labourers, the emperor impressing three men out of every ten throughout his dominions for its execution. It was finished 205 years before the birth of Christ.

The omission of Marco Polo has been turned by some writers into a proof of his not having visited the countries he describes, and by others, who would rather admit that traveller's authenticity than the antiquity of the wall, into a proof that the astonishing structure could not have existed at the period when the Venetian traveller wrote. The supposition of Marco Polo's having entered China by a route to the south of the wall, as we have stated, saves at once the consistency of the traveller and the antiquity of the work: than the latter few things can be better authenticated.

"The period of its completion is an historical fact as authentic as any of those which the annals of ancient kingdoms have transmitted to posterity. From that period (about three centuries before the Christian era) the transactions of the Chinese Empire have been regularly, and without any chasm, recorded, both in official documents and by private cotemporary writers. Nowhere had history become so much an object of public attention, and nowhere more the occupation of learned individuals*."

But, it has been again objected, Marco Polo did not merely arrive once in China and depart by the same route; for "he resided many years in the country, was actively employed in the service of the Chinese Emperor, who sent him occasionally upon foreign missions; and, in the performance of his ordinary duties, must have been incessantly passing and repassing between the capital, where was his master's winter residence, and the summer palaces, by the gates or fortified passes through which the great roads lead to Northern Tartary, where the character of the great national rampart well deserves the epithet of stupendous. In this quarter it is that the omission is a subject of surprise, and not in that where he, together with his father and uncle, may be presumed to have entered the Chinese territory†." In these routes we cannot account for his silence by the wall's being, as it is described by Du Halde, in the western part, "merely made of earth; low, narrow, sometimes buried in the sand." But still he might have passed the wall without being informed of its wonderful extent, or in what it differed from the other fortified posts, towers, or castles which he so frequently notices;—he might have seen it stretching far across a plain without conceiving its marvellousness, which consisted not in a section of it at any particular part, but in it so extending for hundreds of miles; and there are well-grounded reasons for believing that the Chinese themselves would tell him nothing about its extent, and in no way direct his attention to it. Sir George Staunton informs us, indeed, "that the Chinese, with whom curiosity vanishes with the novelty of the object, look now upon the great wall with perfect indifference."

Lord Macartney and his embassy seem to have been allowed to approach it and pass through it without any remarks being made to them by any of their very numerous Chinese escort; but being previously well informed of its situation, and how wonderful a work it was, these gentlemen stole away and examined it. Without the previous information they were in possession of, they certainly would have set down nothing more in their journals than, that at such a point they had passed a wall, &c., and have no more described the great wall than did Marco Polo, who, it may be assumed, had never heard of it. Lord Macartney expressly says, it was not without management that he and his suite contrived to examine the wall at their leisure, and that some of his conductors appeared rather uneasy at the length of their stay upon it. They were astonished at their curiosity, and almost began to suspect the Englishmen, as his Lordship believed, of dangerous designs. Thus the well-known and ridiculous jealousies of the Chinese might well be supposed to prevent them giving information to those they saw curious about the matter, whilst their general indifference, as already mentioned, would equally lead to silence, and prevent them from raising an interest

* Sir George Staunton's 'Embassy,' vol. ii.

† Mr. Marsden's 'Translation of Marco Polo,' book i., chap. xli., note 446.

which did not pre-exist. Of the Chinese with his Lordship, Van-ta-gin, and Chou-ta-gin, two grandees of the court, though they had passed the wall twenty times before, had only visited it once, and some of the other attending Mandarines had never visited it at all. And though Lord Macartney gives a good description, and some amusing speculations of his own, he does not appear to have obtained from his Chinese fellow-travellers a single point of information concerning the Great Wall.

We learn, moreover, from the learned notes which Mr. Marsden has appended to his valuable translation of 'Marco Polo's Travels' the remarkable circumstance, "that in the Persian account of the journey performed by the ambassadors sent by Shah Rokh, in 1420, to the emperor of China, and which in many respects is circumstantial, no notice whatever is taken of the wall; although in their progress from Kan-cheu to the Karamuran or Yellow-river, they must have coasted or traversed the line of its direction. And again, from the same authority, we learn that, "even by the geographers of Persia and Arabia, who were laborious in collecting information of that kind, and had the means of obtaining it from the Mohammedans who traded between Bokhara, Kashgar, and China, no mention is made of any extensive rampart, either of masonry or earth, constructed for defending the borders of Khatai."

In case what we have stated under the head of this curious discussion should not carry conviction to the sceptical, we will end by a supposition which Mr. Marsden has referred to; and it does not appear to us, who have some acquaintance with the manner in which the copies of works were multiplied in Italy some centuries ago, a gratuitous or an unreasonable supposition, that the portion of Marco Polo's MS. that described the great wall has been lost by accident, or omitted by design, as too improbable. And Mr. Marsden supports this conjecture by the fact that, in Ramusio's printed version of Marco Polo, a whole chapter (xxxviii.) has been omitted without notice, though it existed in the earlier Latin editions, was necessary for the connexion of the subject, and is indirectly referred to in a subsequent chapter of the same book.

Note.—To preclude misapprehension, it is proper to state, that where the article on 'Pekin,' in a previous Number, (No. 216,) assigns nine gates to the city, the Tartarian city is particularly intended. The Chinese town, which joins it on the south, has five more gates, making fourteen, if we regard the whole as one city.

ANALYSIS OF AN OLD MAGAZINE.

[From a Correspondent.]

I lately picked up at a book-stall the volume of the 'Universal Magazine' for 1775,—just sixty years ago; and when I came to examine it, there seemed to me so many obvious points of difference between this old magazine and the periodical publication of our own day, and that it contained so many indications of differences of tastes and habits between our grandfathers and ourselves, that an account of the contents of one of the numbers would form a very suitable article for the 'Penny Magazine.' I take the first number of the volume. The number was sold at 6*d.*, and contained fifty-six pages.

The first object of attention is the allegorical frontispiece,—not a badly-executed copper-plate engraving, but the meaning of which seems perfectly inscrutable, except that it must refer in some way to literature. A lady, without any clothes, stands with a pen in her hand, and before her a great book which rests on the back, and between the wings, of a stout old man, who, by his scythe and hour-glass, seems to be Time, and who, with great good nature, has placed himself on the ground in a very inconvenient posture, in order to form with his back a suitable writing-desk for the lady. The fair scribe herself is looking up to a hovering figure, who seems addressing her, and at the same time lets a string of flowers fall around her person. It is odd that the figure in the air is the only one in the picture unfurnished with wings. Referring to the very necessary explanation which is given in the text of the work, I find that all this represents Apollo dictating to Clio, the historic muse, "who, by her art, is supposed to prevent the ravages of Time from destroying the memory of wise and virtuous actions." What a dunce was I not to discover this! However, the Apollo being a full-robed figure of a feminine appearance is as little as possible like the common representations of him. Yet we are told that "this beautiful allusion is taken from a drawing by the celebrated Eisen, who is confessedly unrivalled in a species of painting *which is now in the highest reputation;* we mean, the allegorical kind." The loss of reputation which allegorical painting has since undergone, is a circumstance which I certainly see no occasion to lament.

The copious title-page is a perfect advertisement, and affords a striking contrast to the brief and undescriptive titles of modern magazines. Here it is:—

"The Universal Magazine of Knowledge and Pleasure; containing—

News,	Geography,	Gardening,
Letters,	Voyages,	Cookery,
Debates,	Criticism,	Chemistry,
Poetry,	Translations,	Mechanicks,
Music,	Philosophy,	Trade,
Biography,	Mathematics,	Navigation,
History,	Husbandry,	Architecture,

and other Arts and Sciences, which may render it Instructive and Entertaining to Gentry, Merchants, Farmers, and Tradesmen; to which occasionally will be added an impartial account of Books in several Languages, and of the State of Learning in Europe: also of the Stage, new Operas, Plays, and Oratorios."

It ought to be remarked that this magazine was one of the earliest and most permanently successful rivals of the 'Gentleman's Magazine.' It commenced in 1747, and, after extending to 112 volumes, it would seem to have been discontinued in 1803, as I have not been able to find a volume of later date. As its title denotes, it aimed at a more general and popular character than the venerable publication which preceded and survived it; and although, from the lighter tone of its contents, and the absence of minute researches and local illustrations, it never approached the 'Gentleman's Magazine' in literary rank, and is never, like that, quoted as an authority, still the work was judiciously planned and respectably executed, and deserved the success which it obtained. To us, I dare say, it is also recommended by the fact, that it was one of the earliest periodicals not exclusively addressed to "the gentry," and condescended to number "farmers and tradesmen" among those to whom it looked for support. The 'Universal Magazine' was thus a diffusionist in its day, although that day did not allow it to consider the operative classes as embraced within the "universal" scope of its objects.

The first article in the number, which is suggested by the frontispiece, is entitled, 'A Critical Inquiry into the defects of modern artists in Painting and Poetry, with regard to Allegorical subjects.' The object of the paper is to show that the moderns have grievously departed from the simplicity of ancient allegorical representations. Their own frontispiece evinces this so satisfactorily, that the essay on the subject might well be dispensed with. The next article is a 'Life of William Penn,' the introduction of which was considered very appropriate at a time when the disputes with the American colonies engrossed so much of the public attention. Then follows a sort of treatise 'on Marriage, in an epistle from a Father to his Daughter.' Next comes a sketch of the plot of the still well-known comedy of 'The Rivals,' which had then just been brought out at Covent Garden Theatre. This is fol-

lowed by a string of 'New Maxims, Observations, Thoughts, Sayings, &c., on various subjects.'

The next article is Burke's characters of George Grenville and Lord Chatham, as given in his celebrated speech on American taxation. I need not praise this; and I cannot praise the article which follows, entitled 'Winter; a Dialogue between Cleon and Lycidas, illustrated with a beautiful allegorical representation of that season of the year.' More allegory!—but my copy has lost this "beautiful engraving." After this comes 'The History of England,' being a continuation of a well-digested abstract which runs through several of the volumes of the magazine. Then there is an interesting paper, from the 'Philosophical Transactions,' on the stilling of waves by means of oil; several remarkable instances of which are quoted from Dr. Franklin and others. This is followed by one of 'Lord Chesterfield's Letters to his Son;' and then comes a letter from a correspondent, who very much doubts the statement of a former correspondent that Milton was probably indebted for the first idea of 'Paradise Lost' to a work published in 1661 by a disciple of Behmen. The idea of the poem was certainly conceived long before 1661, though the poem was not published till 1665; and the writer avers that there is no trace of Behmen's philosophy throughout the 'Paradise Lost,' or any evidence that Milton was at all acquainted with the works of that visionary.

The next paper consists of Mrs. Griffith's remarks on the tragedy of 'King Lear,' being one of a series of papers under the title of 'The Morality of Shakspeare's Drama.' Then come three 'Remarkable Anecdotes.' These are succeeded by a copy of the famous petition of the American Congress to the King. This is followed by a "true story" on filial affection. Then comes an account of the new tragedy of 'Matilda.' This is followed by the 'Natural History of the Turkey Cock, with an accurate engraving of that beautiful bird.'

We at length come to the poetry, a great department in old periodical works. Of this the less that is said the better for the reputation of our "universal" friend. Some extracts, from Dr. Johnson's recently-published 'Journey to the Western Isles,' conclude the literary portion of the number.

The rest of the magazine is devoted to news. This, to us, forms the most interesting portion of the whole. First, there are 'Foreign Advices,' which happen to contain little of interest this month. Then comes a brief abstract of the proceedings in Parliament. The names of the speakers are given at length, and without any attempt at disguise. This had now been the practice of the 'Universal Magazine' for some years; but was not adopted by the 'Gentleman's Magazine' until 1782. In the present instance, the names of Lord North, Burke, and Fox occur among the speakers who chiefly discussed the affairs of America. It seems that at this time eleven o'clock was considered a late hour for the rising of the House of Commons. When the debates were first published, the initial and final letters of the speakers' names only were given: the absent letters being supplied either by an equivalent number of asterisks, or by a dash proportioned to the length of the name. When, however, the name was such that this method rendered it too liable to be confounded with some other, the two final letters were given, and sometimes the middle letter. The 'Gentleman's Magazine' at one time tried a curious plan of managing this business. The accounts were given as of proceedings in the "Senate of Lilliput;" the Dukes were "Nardacs;" Lords "Hurgoes;" Commons "Clinabs;" and the names were either slightly anagrammatised, or so spelt with letters conveying a similar sound with the real ones, that they were just as intelligible as if spelt correctly. The key to the names was given at the end of the year in the form of an advertisement of a work to be published in fifty volumes, a specimen of which, so far as related to the "Senate of Lilliput," was then given. This specimen contained the key. The debates then read thus:—"The Nardac Befdort [Bedford] spoke in substance as follows:"—"The Hurgo Toblat [Talbot] spoke next, and among other things said,"—"Sir Rub. Walelup [Walpole] rose again and spoke to this effect." In the same way Lyttleton was "Lettyltno;" Bathurst "Brustath;" Fox "Feauks;" Wynn "Ooyn," &c.

The 'Historical Chronicle,' which comes next, concludes the number.

A few brief extracts from this portion will be amusing:—

"January 6.—On Wednesday Mr. Brower, print-cutter, near Aldersgate Street, was attacked on the road to Enfield by a single highwayman, whom he recollected to be a tradesman in the city. He accordingly called him by his name, when the robber shot himself through the head."

It appears from the news, the tales, and the plays of the period, that it was not then at all uncommon to find persons apparently occupying a respectable place in society acting as highwaymen. This is a thing never heard of now; indeed the race of highwaymen has become nearly extinct altogether; and this is one of the thousand facts which speak well for the present state of society, notwithstanding all that my good old grandmother used to say about the blessedness of the times which we have now under consideration.

"January 10.—Saturday evening, a woman applied to a resolver of lawful questions in a court in Fleet Street, to be satisfied in relation to some future events: but while poor Albumazer was consulting the stars in his chamber in order to resolve her doubts, he seems to have been utterly ignorant of his own present fortune; for some thieves (supposed to be the inquirer's confederates) stripped his other apartment of everything that was conveniently portable."

I wish I could feel that these "Albumazers"—these nurses of folly and superstition,—were also an extinct race. They are certainly less numerous and less obtrusive than formerly; but they still exist every where, and will still continue to exist while any dupes are to be found. I have myself known persons go upwards of forty miles to consult a worthy of this profession, whose willing victims enabled him to live upon the fat of the land.

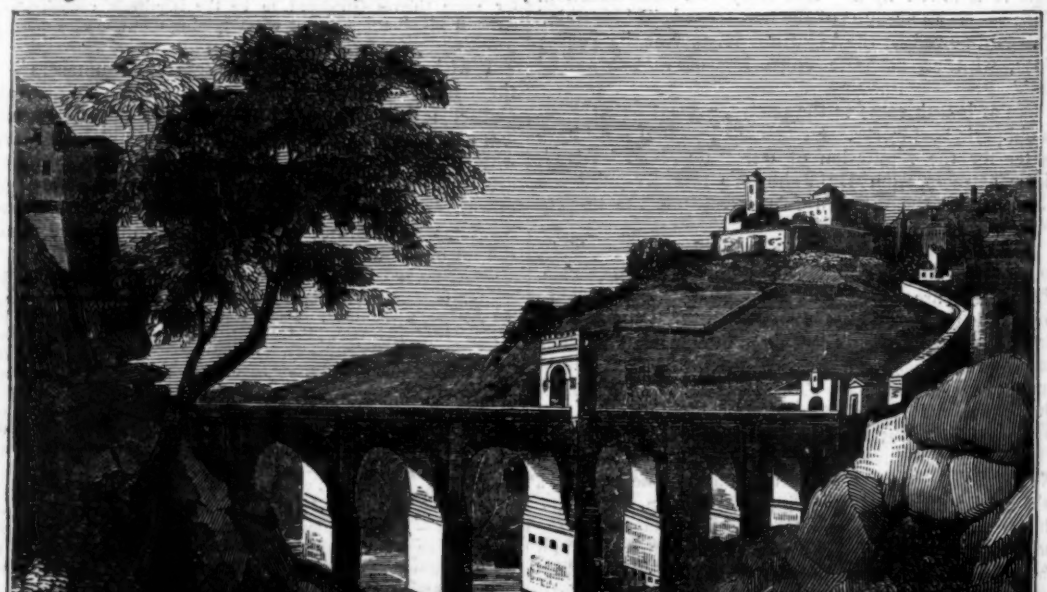
"January 18.—This day there was a numerous and splendid court at St. James's, on account of its being appointed for keeping her Majesty's birth-day. Their Royal Highnesses the Prince of Wales [the late George IV.], the Bishop of Osnaburg [late Duke of York], Prince William Henry [the present King], Prince Edward [late Duke of Kent], a great number of nobility, and all the foreign ministers were present. The court did not break up till past five o'clock. At night there was a ball. His Majesty sat to receive the compliments of the nobility and gentry in a suit of light blue velvet and silver, with spangles; and the Queen was dressed in an elegant brocaded full suit of clothes, and a new elegant diamond stomacher, with necklace and ear-rings."

Hurry.—The Americans are in too great a hurry to plant hedges: they have abundance of native material; but a wooden fence is put up in a few weeks,—a hedge takes as many years to grow; and, as I said before, an American has not time to be a year about anything. When first the country was settled, the wood was an encumbrance, and it was cut down accordingly; that is by no means the case now; and the only recommendation of these fences is, therefore, the comparative rapidity with which they can be constructed. One of the most amiable and distinguished men of this country once remarked to me, that the Americans were in too great a hurry about everything they undertook to bring anything to perfection. And certainly, as far as my observation goes, I should *calculate* that an American is born, lives, and dies twice as fast as any other human creature. I believe one of the great inducements to this national hurry is, that "time is money," which is true; but it is also true, sometimes, that "most haste makes worst speed."—*Mrs. Butler's Journal.*

ALCANTARA

Alcantara is a small frontier city of great strength in Spanish Estremadura, upon the banks of the Tagus. The town was originally built by the Moors, on account of the convenience of a fine stone bridge which, as recorded in an inscription over one of the arches, was built in the reign of the emperor Trajan by the people of Lusitania, who were assessed to pay the expenses. It was thus that the Moors gave to the town the name of Al-Cantara, which in their language signifies *the bridge*. This bridge is thrown across the river at a place where it flows in a deep channel between two high and steep rocks. It is elevated 211 feet 10 inches above the level of the water; although it consists but of 6 arches, is 568 feet in length and 27 feet 6 inches in breadth. Of the six arches the two in the centre are 94 feet wide. A triumphal arch in honour of Trajan rises in the centre, and a mausoleum constructed by the Roman architect (Lacer) stands at the extremity towards the town. This mausoleum, which owes its preservation to the enormous stones with which it is constructed, has been changed into a chapel dedicated to St. Julian, and is now an object of veneration both to the townspeople and peasantry. There is nothing else remarkable about the town, except the strong walls, bastions, and other works, with which its situation on the borders of Portugal has caused it to be fortified. There are about 3000 inhabitants, who carry on some trade in wool and cloth.

When the town was taken from the Moors by Alphonso IX., king of Castille, in the year 1212, it was in the first instance committed to the charge of the knights of Calatrava; but, two years after, it was transferred to the knights of St. Julian del Parero, or St. Julian of the Pear-tree, an order instituted in 1170, and which soon relinquished this odd denomination for that of Alcantara, at the same time assuming a green colour for the cross *fleur-de-lys* which they bore over their large white cloaks. This was apparently intended for the purpose of a distinction between their order and that of Calatrava. When the town of Alcantara was surrendered to the knights of the Pear-tree, it was stipulated that there should be a confraternity between the two orders, with the same practices and observances in both, and that the Alcantara order should be subject to be visited by the grand-master of Calatrava. The Alcantara knights soon, however, became dissatisfied with this engagement, and released themselves from it, on the pretence that their grand-master had not been called, according to one of the stipulations, to the election of the grand-master of the Calatrava order. The knights make a considerable figure in the history of the expedition against the Moors,—war against them being one of the grounds on which the order was instituted. They were, in fact, military monks, under the same vows as the Benedictines. After the expulsion of the Moors and the taking of Granada, the sovereignty of both the orders of Alcantara and Calatrava was settled upon the crown of Castille, in the reign of Ferdinand and Isabella, when the order transferred the town to the general government. The order of Alcantara was very wealthy. After it had become comparatively poor, it still possessed 33 commanderies, four alcaydies, and four priories, producing an annual revenue of 80,000 ducats. It has probably since undergone further diminution, but to what extent we are not informed.



[Bridge and Town of Alcantara, Spain.]

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